

AMENDMENTS TO THE CLAIMS

Please amend Claims 1 and 7 as indicated below and cancel Claim 2.

1. (Currently Amended) A process for preparing an improved whey protein hydrolysate containing bioactive peptides comprising hydrolysing a whey protein isolate (WPI) with one or more enzymes characterized in that:

i) at least one of the enzymes is Neutrase and the enzyme to substrate ratio is between about 0.01% and about 3% w/w total solids; the enzyme is a heat labile protease;

ii) the hydrolysis is conducted[[,]] at a temperature of between about 30°C and 65°C and at a pH of about 3.5 to about 9.0 ~~when said enzyme is a neutral protease, at a pH of about 2.5 to about 6.0 where said enzyme is an acid protease; and at a pH of about 5.0 to about 10.0 where said enzyme is an alkaline protease;~~

iii) the hydrolysis is terminated when a degree of hydrolysis of no greater than about 10% has been reached;

iv) the hydrolysis is terminated by deactivating said one or more enzymes; and wherein the product of the process is water soluble.

2. (Canceled)

3. (Previously presented) A process as claimed in claim 1, wherein said enzyme deactivating step iv) comprises heat deactivation.

4. (Original) A process as claimed in claim 3, wherein said heat deactivation comprises heating said hydrolysate for up to ten seconds to a temperature up to about 100°C.

5. (Original) A process as claimed in claim 3, wherein, when said hydrolysis is conducted at a temperature of below about 65°C, said heat deactivating step is conducted at about 65°C to about 70°C for from about 10 seconds to about 15 minutes.

6. (Original) A process as claimed in claim 3, wherein, when said hydrolysis is conducted at a temperature below about 60°C, said heat deactivating step is conducted at about 60° to about 65°C for from about 10 seconds up to about 30 minutes.

7. (Currently Amended) A process as claimed in claim 1, wherein said enzyme deactivating step comprises altering the pH of said whey protein-containing substrate to a pH at which ~~said protease~~ Neutrase is not active.

8. (Previously presented) A process as claimed in claim 7, wherein said enzyme deactivating step includes heat deactivation.

9. (Previously presented) A process as claimed in claim 1, wherein said enzyme deactivating step iv) comprises subjecting said hydrolysate to ultrafiltration with an ultrafiltration membrane having a nominal molecular weight cutoff in the range of about 10-500 kDa.

10. (Original) A process as claimed in claim 9, wherein said ultrafiltration membrane has a nominal molecular weight cut off in the range of about 10-200 kDa.

11. (Previously presented) A process as claimed in claim 1, wherein said enzyme is immobilised on an inert support during said hydrolysis step ii).

12. (Original) A process as claimed in claim 11, wherein said inert support is Roehm Eupergit, carrageenan particles, chitosan particles or any other suitable inert support material.

13. (Previously presented) A process as claimed in claim 1, wherein the degree of hydrolysis is from about 3% to about 10%.

14. (Original) A process as claimed in claim 13, wherein the degree of hydrolysis is from about 3% to about 5%.

15. (Previously presented) A process as claimed in claim 1, wherein the whey protein hydrolysate so produced comprises one or more bioactive peptides selected from the group

consisting of SAP (SEQ ID NO: 1), MKG (SEQ ID NO: 2), ALPMH (SEQ ID NO: 3), LIVTQ (SEQ ID NO: 4), VSLPEW (SEQ ID NO: 5), INYWL (SEQ ID NO: 6), LKPTPEGDLEIL (SEQ ID NO: 7) and LKGYGGVSLPEW (SEQ ID NO: 8).

16. (Previously presented) A process as claimed in claim 1, wherein the whey protein hydrolysate so prepared comprises at least one bioactive peptide selected from the group consisting of LIVTQ (SEQ ID NO: 4), MKG (SEQ ID NO: 2) and ALPMH (SEQ ID NO: 3), in combination with at least one bioactive peptide selected from the group comprising SAP (SEQ ID NO: 1), VSLPEW (SEQ ID NO: 5), INYWL (SEQ ID NO: 6), LKPTPEGDLEIL (SEQ ID NO: 7) and LKGYGGVSLPEW (SEQ ID NO: 8).

17. (Previously presented) A pharmaceutical composition comprising one or more bioactive peptides produced by the process of Claim 1 together with a pharmaceutically acceptable carrier, wherein the one or more bioactive peptides are selected from the group consisting of SAP (SEQ ID NO: 1), VSLPEW (SEQ ID NO: 5), INYWL (SEQ ID NO: 6), LKPTPEGDLEIL (SEQ ID NO: 7) and LKGYGGVSLPEW (SEQ ID NO: 8).

18. (Previously presented) A pharmaceutical composition as claimed in claim 17, additionally comprising at least one bioactive peptide selected from the group consisting of LIVTQ (SEQ ID NO: 4), MKG (SEQ ID NO: 2) and ALPMH (SEQ ID NO: 3).

19. (Previously presented) A method of treating or preventing hypertension in a mammal, said method comprising administering an effective amount of a WPI hydrolysate produced according to the process of claim 1 to a mammal in need thereof.

20. – 21. (Cancelled)

22. (Previously presented) A non-bitter, water soluble WPI hydrolysate product containing bioactive peptides, prepared by the process of claim 1.

23. (Original) A product as claimed in claim 22, wherein the degree of hydrolysis of the WPI is about 3% to about 5%.

24. (Original) A product as claimed in claim 23, wherein the main particle size of whey proteins in the product is less than about 30 microns.

25. (Original) A product as claimed in claim 24, wherein the main particle size is less than about 3 microns.

26. (Previously presented) A product as claimed in claim 22, which is substantially clear or white in solution.

27. (Previously presented) A product as claimed in claim 22, wherein one or more of said bioactive peptides is selected from the group consisting of SAP (SEQ ID NO: 1), MKG (SEQ ID NO: 2), ALPMH (SEQ ID NO: 3), LIVTQ (SEQ ID NO: 4), VSLPEW (SEQ ID NO: 5), INYWL (SEQ ID NO: 6), LKPTPEGDLEIL (SEQ ID NO: 7) and LKGYGGVSLPEW (SEQ ID NO: 8).

28. (Previously presented) A product as claimed in claim 22, comprising at least one bioactive peptide selected from the group consisting of LIVTQ (SEQ ID NO: 4), MKG (SEQ ID NO: 2) and ALPMH (SEQ ID NO: 3), in combination with at least one bioactive peptide selected from the group comprising SAP (SEQ ID NO: 1), VSLPEW (SEQ ID NO: 5), INYWL (SEQ ID NO: 6), LKPTIEGDLEIL (SEQ ID NO: 7) and LKGYGGVSLPEW (SEQ ID NO: 8).

29. (Previously presented) A food product containing a WPI hydrolysate product as claimed in claim 22.

30. (Previously presented) A method of reducing systolic blood pressure in a subject comprising administering an effective amount of a WPI hydrolysate as claimed in claim 22 or food product containing said hydrolysate as claimed in claim 29 to a patient in need thereof.

31. (Cancelled)
32. (Previously presented) A pharmaceutical composition comprising the product of claim 22 together with a pharmaceutically acceptable carrier.
33. (Previously presented) Any one or any combination of two or more peptides selected from the group consisting of SAP (SEQ ID NO: 1), VSLPEW (SEQ ID NO: 5), INYWL (SEQ ID NO: 6), LKPTPEGDLEIL (SEQ ID NO: 7) and LKGYGGVSLPEW (SEQ ID NO: 8).
34. (Previously Presented) Any one bioactive peptide selected from the group consisting of LIVTQ (SEQ ID NO: 4), MKG (SEQ ID NO: 2) and ALPMH (SEQ ID NO: 3), in combination with at least one bioactive peptide selected from the group comprising SAP (SEQ ID NO: 1), VSLPEW (SEQ ID NO: 5), INYWL (SEQ ID NO: 6), LKPTIEGDLEIL (SEQ ID NO: 7) and LKGYGGVSLPEW (SEQ ID NO: 8).
35. (Previously Presented) A method of treating or preventing hypertension in a mammal, said method comprising administering an effective amount of the pharmaceutical composition of claim 17.
36. (Previously Presented) A method of treating or preventing hypertension in a mammal, said method comprising administering an effective amount of the pharmaceutical composition of claim 18.